Rymer, Edwina

From: Dorsey, Nancy
Sent: Thursday, October 01, 2015 8:31 AM
To: R6 6WQ-SG
Cc: Lawrence, Rob;Brown, Jamesr
Subject: FW: The primer is FINISHED..

From: Ben Grunewald [mailto:ben@gwpc.org]
Sent: Wednesday, September 30, 2015 10:20 PM
Subject: Re: The primer is FINISHED..

AP's Julie Carr Smyth's story was picked up about 129 outlets Ohio media that picked up Julie's story included: Martin's Ferry Times Leader, Lorain Morning Journal, News Herald (Lake County), Columbus Dispatch, Akron Beacon Journal, WOWK, WHIO in Dayton. Nationally, it was also picked up in: Washington Post, FOX 5 in New York, Tulsa World, Denver's ABC station and the Dallas Morning News.

States get advice on handling quakes (Posted on Columbus Dispatch's website)

By Julie Carr Smyth *ASSOCIATED PRESS* • Tuesday September 29, 2015 6:20 AM

A group of drilling states, seismologists, academics and industry experts issued guidance on Monday in a new report on handling human-induced earthquakes caused by hydraulic fracturing or the disposal of fracking wastewater.

The report, produced by the StatesFirst initiative, represents perhaps the most-candid discussion on the topic since tremors across the mid-continent — including in Ohio, Oklahoma, Texas and Colorado — began being linked to fracking and deep-injection disposal of wastewater around 2009.

It includes descriptions of how states handled seismic incidents, including their public-relations strategies, and it matter-of-factly references links between fracking or deep-injection wastewater disposal and earthquakes. Previously, public admissions had been mostly fuzzy.

The group stopped short of suggesting model regulations.

That's because each state's laws and geography are unique, said Rick Simmers, a co-chairman of the effort. The report says "a one-size-fits-all approach would not be an effective tool for state regulators."

Simmers, chief of the Oil & Gas Resources Management Division of the Ohio Department of Natural Resources, said the report is in the form of a primer, providing states with up-to-date scientific and technical data, case studies and several suggested approaches for detecting and managing the quakes.

Fracking involves blasting water and chemicals into shale formations to fracture the rock and release oil, natural gas and natural-gas liquids trapped inside. The process involves thousands of gallons of water that becomes contaminated and must be trucked away and deposited at special deep-injection facilities.

Both processes have been associated with human-induced tremors, including some easily felt by people.

Simmers said the report conveys a plethora of important information, directing states on such issues as siting, well depth, construction methods, faults present at the site and how to judge an area's seismic history.

"Those two oil-and-gas activities do create some seismicity," Simmers said. "It is very rare. If you compare it to the amount of fluid that's injected for disposal, or the amount of fluid and the number of jobs that occur for hydraulic fracturing, it's very rare. But it does occur.

"It is safe. We monitor the operations very carefully, as do our counterparts in other states."

The working group arose after Ohio's discovery in April 2014 of a probable link between fracking and five small tremors near Youngstown. It was the first time that the new oil-and-gas drilling technique that had been sweeping the country had been linked to seismic activity in the eastern U.S., the second time in the U.S. and only the fourth time worldwide.

Earlier, Ohio Gov. John Kasich had halted disposal of fracking wastewater surrounding a well site in the Youngstown area after a public outcry over a series of earthquakes later determined to have been linked to a deep-injection well.

The StatesFirst coalition partnered with the Interstate Oil and Gas Compact Commission and the Ground Water Protection Council in the effort, which began last year.

The group gathered scientific research on the issue as a service to the 13 participating states: Ohio, Alaska, Arkansas, California, Colorado, Illinois, Indiana, Kansas, Oklahoma, Texas, Utah, West Virginia and Wyoming. Many of the states have not experienced an earthquake induced by fracking or wastewater disposal, but the report urges them to put regulations and procedures in place for dealing with an incident, including strategies for relaying information to the public.

"Induced seismicity is a complex issue where the base of knowledge is changing rapidly," said Kansas Geological Survey interim director Rex Buchanan, a working group co-chairman. "State regulatory agencies that deal with potential injection-induced seismicity should be prepared to use tools, knowledge and expertise — many of which are offered in this primer — to prepare for and respond to (any) occurrences."

The report focuses primarily on deep injection wells for drilling wastewater. The vast majority of such wells have never been tied to earthquakes, but it is more likely that a tremor would come from one of those wells than from a hydraulically fractured well.

Wastewater containing chemicals, brine, naturally occurring radiation and mud is injected directly into basement rocks or into overlying formations that contain crevices into the basement rock. When this occurs near a sensitive fault, tremors can occur.

http://www.dispatch.com/content/stories/local/2015/09/29/states-get-advice-on-handling-quakes.html

Geologists urge state-level approach to earthquakes from wastewater injection (Topeka Capital Journal)
Kansas already has some restrictions
Posted: September 28, 2015 - 6:15pm

By Megan Hart
megan.hart@cjonline.com

A group of state regulators, industry representatives and others urged a state-level approach to addressing earthquakes linked to oil and gas drilling.

Earthquakes in the plains region have increased dramatically since 2009. The U.S. Geological Survey recorded 855 earthquakes with a magnitude of 3 or higher from 1973 to 2008, but the rate increased to 1,855 earthquakes from 2009 to Aug. 15 of this year. Most of those earthquakes were in Oklahoma, but a few were recorded in southeast Kansas. People can't feel earthquakes below magnitude 3.

Research has linked the earthquakes to injecting waste fluids from oil and gas extraction, which are primarily saltwater. The actual drilling itself and hydraulic fracturing, which involves injecting a mix of fluids and sand to free oil and gas trapped within rock, don't appear to have caused earthquakes in Kansas and Oklahoma.

Leslie Savage, chief geologist with the Railroad Commission of Texas, said the geological formations under each state and other conditions vary, so each state will need to determine what hazards it may be susceptible to, the risk of those hazards impacting people living there and what measures to take. For example, some states might elect to prohibit injection near faults that are at a greater risk of causing earthquakes, require additional seismic monitoring, or set up a process to suspend injection if there is evidence it is inducing quakes, she said.

"A one-size-fits-all regulatory approach is not appropriate for this issue," she said.

The Kansas Corporation Commission placed limits on the amount of saltwater that could be injected in Sumner and Harper counties starting in March. Early data suggests the number of earthquakes has fallen since then, but the USGS isn't ready to declare if the limits have had their desired effect, or if the lower rate since March could be due to chance.

Rex Buchanan, interim director of the Kansas Geological Survey, pointed to gaps in knowledge about induced seismicity. Faults in the deep subsurface, or "basement," rock aren't well-mapped, he said, and it isn't clear which faults are under enough stress to produce earthquakes if injection increases the pressure around them.

"It takes a real unusual set of circumstances to induce seismology," he said.

Geologists also don't know the maximum magnitude an injection-induced earthquake could reach. Most induced quakes in Kansas have been smaller than magnitude 5, which is where structural damage generally begins, Buchanan said. Larger earthquakes in Asia have been linked to natural gas drilling or building dams, however.

Ivan Wong, principal seismologist with consulting company AECOM, said states also need to be careful to sort out which earthquakes actually are caused by human activities. Much of the central United States has few seismic monitoring stations, he said, so location data can be off by as much as 6 miles, making it even more difficult to establish a link.

"Just because an earthquake occurs, doesn't mean it's induced," he said.

Rick Simmers, chief of the Ohio Department of Natural Resources, emphasized the report wasn't intended to be a template for potential state regulations. It also didn't address how states might pay for increased seismic monitoring.

The working group included representatives of state regulatory agencies, the Groundwater Protection Council and the Interstate Oil and Gas Compact Commission. Oil and gas industry representatives gave input, as did representatives of the USGS and university geology departments. The report had been in the works since May 2014. Participating states included Alaska, Arkansas, California, Colorado, Illinois, Indiana, Kansas, Ohio, Oklahoma, Texas, Utah, West Virginia and Wyoming.

Megan Hart can be reached at (785) 295-5659 or megan.hart@cjonline.com.
Follow Megan on Twitter @meganhartMC.

http://cjonline.com/news/business/2015-09-28/geologists-urge-state-level-approach-earthquakes-wastewater-injection

U.S. Drilling States Issue Report On Handling Human-Induced Earthquakes (CBS DFW)
September 28, 2015 11:37 AM

COLUMBUS, Ohio (CBSDFW.COM/AP) — A group of U.S. drilling states, seismologists, academics and industry experts issued guidance Monday in a frank new report on handling human-induced earthquakes caused by hydraulic fracturing or the disposal of fracking wastewater.

The 150-page report, produced by the StatesFirst initiative, represents perhaps the most candid discussion on the topic since tremors across the mid-continent — including in Texas, Oklahoma, Colorado and Ohio — began being linked to fracking and deep-injection wastewater disposal around 2009.

It includes descriptions of how states handled various seismic incidents around the country, including their public relations strategies, and matter-of-factly references links between fracking or deep-injection wastewater disposal and earthquakes. Previously, public admissions had been fuzzy in some cases.

The group stopped short of suggesting model regulations, however.

That's because each state's laws and geography are unique, Ohio Oil & Gas Chief Rick Simmers, who co-chaired the effort, told The Associated Press. The report says "a one-size-fits-all approach would not be an effective tool for state regulators."

Simmers said the report is in the form of a primer, providing states with up-to-date scientific and technical data, case studies and several suggested approaches for detecting and managing the quakes.

In Texas, a state inquiry found that an oil and gas company's disposal well operations likely did not cause a series of North Texas earthquakes. The findings directly contradict a study published by Southern Methodist University geologists, pinning the earthquakes to the XTO well and a well operated by Houston-based Enervest.

Fracking involves blasting water and chemicals into shale formations to fracture the rock and release oil,natural gas and natural gas liquids trapped inside. The process involves thousands of gallons of water that becomes contaminated and must be trucked offsite and deposited at special deep-injection facilities.

Both processes have been associated with human-induced tremors, including some easily felt by people.

Simmers said the report conveys a plethora of important information, directing states on such issues as siting, well depth, construction methods, faults present at the site and how to judge an area's seismic history.

“Those two oil-and-gas activities do create some seismicity. It is very rare. If you compare it to the amount of fluid that’s injected for disposal or the amount of fluid and the number of jobs that occur for hydraulic fracturing, it’s very rare. But it does occur,” Simmers said. “It is safe. We monitor the operations very carefully as do our counterparts in other states.”

The working group arose after Ohio’s discovery in April 2014 of a probable link between fracking and five small tremors in eastern Ohio near Youngstown. It was the first time in the Northeast that the new oil-and-gas drilling technique that had been sweeping the country had been linked to seismic activity, the second time in the U.S. and only the fourth time worldwide.

Earlier, Ohio Gov. John Kasich had halted disposal of fracking wastewater surrounding a well site in the same region after a series of earthquakes later tied to a deep-injection well caused a public outcry.

The StatesFirst coalition partnered with the Interstate Oil and Gas Compact Commission and the Ground Water Protection Council in the effort, which began last year.

The group gathered the most current science on the issue as a service to the 13 participating states: Texas, Alaska, Arkansas, California, Colorado, Illinois, Indiana, Kansas, Ohio, Oklahoma, Utah, West Virginia and Wyoming. Many have not experienced any earthquakes induced by fracking or wastewater disposal, but the report urges them to put regulations and procedures in place for dealing with any eventual incidents, including strategies for relaying the information to the public.

“Induced seismicity is a complex issue where the base of knowledge is changing rapidly,” said Kansas Geological Survey interim director Rex Buchanan, a working group co-chair. “State regulatory agencies that deal with potential injection-induced seismicity should be prepared to use tools, knowledge, and expertise — many of which are offered in this primer — to prepare for and respond to (any) occurrences.”

The report focuses primarily on deep injection wells for drilling wastewater, known as Class II wells. The vast majority of such wells have never been tied to earthquakes, but it is more likely that a tremor would come from one of those wells than from a hydraulically fractured well.

Wastewater containing chemicals, brine, naturally occurring radiation and mud is injected directly into basement rocks or into overlying formations that contain crevices into the basement rock. When this occurs near a sensitive fault, tremors can occur.

http://dfw.cbslocal.com/2015/09/28/u-s-drilling-states-issue-report-on-handling-human-induced-earthquakes/

Regulatory groups release earthquake report (The Oklahoman)

Energy and water regulators and researchers from more than a dozen states released a policy report Monday on understanding the links between energy production and triggered earthquakes.

by Paul Monies Published: September 28, 2015
Energy and water regulators and researchers from more than a dozen states released a policy report Monday on understanding the links between energy production and triggered earthquakes.

The report, from the StatesFirst initiative organized by the Interstate Oil and Gas Compact Commission and the Ground Water Protection Council, surveys the latest research and policy options for regulators dealing with higher rates of earthquakes linked to wastewater disposal wells from energy production.

For Oklahoma residents, the issues aren't new. The state has had more than 670 earthquakes greater than magnitude 3.0 this year, surpassing the 585 earthquakes in that category for all of 2014.

Regulators at the Oklahoma Corporation Commission have instituted a “traffic light” system for permitting wastewater disposal wells in areas of increased seismicity. The commission also has directed operators to reduce volumes, cut disposal well depths or shut in some wells in counties across the state.

“In Oklahoma, we're way past potential for induced seismicity,” said Michael Teague, Oklahoma's secretary of energy and environment. “We're in the middle of this problem. But if you're a state like Idaho that doesn't have a whole lot of oil and gas activity, this is a helpful document. It's got all kinds of expertise: regulators, industry folks, researchers at the academic institutions.”

Amid concerns over induced seismicity, a handful of Oklahoma residents have petitioned the Environmental Protection Agency to take over Oklahoma's regulation of the Class II wastewater disposal wells used in energy

http://newsok.com/article/5450013

Innovation and Intellectual Property | Mon Sep 28, 2015 4:28pm EDT
Related: SCIENCE, ENVIRONMENT, NATURAL DISASTERS

More research needed on U.S. earthquakes possibly tied to oil and gas work: report (Reuters)

BY CAREY GILLAM

A coalition of U.S. states warned on Monday that a spike in earthquakes potentially tied to oil and gas activity in places not typically prone to them needs urgent attention from regulators and others to protect public safety.

The report to be released later on Monday by States First includes input from governors, regulators and oil and gas policy leaders in 13 states, including Oklahoma and Kansas, where earthquake activity and intensity have risen in recent years.

The report focused on ties between quakes and wastewater injection from oil and gas production work.

"We see something very new and different happening here in the mid-continent," said Rex Buchanan, interim director of the Kansas Geological Survey and co-chair of the group that issued the report. "We're not used to this level of seismicity."

Oklahoma is recording 2.5 earthquakes daily of a magnitude 3 or greater, a seismicity rate 600 times greater than observed before 2008, according to a report in April by the Oklahoma Geological Survey.

The report's aim is to equip states with tools to evaluate connections between seismic events and injection wells, minimize risk, and be ready when seismic events occur.

Many people have associated the process of hydraulic fracking with earthquakes, but the U.S. Geological Survey said in April that the actual hydraulic fracturing process is only occasionally the direct cause of felt earthquakes. (on.doi.gov/1KGiLzy)

Large volumes of wastewater can result from a variety of industrial processes, including energy production, and several scientific studies have shown that some of the increase in seismic activity in parts of the United States has been "induced" by wastewater injections.

Officials from Illinois, Arkansas, Texas, Indiana, Colorado, Alaska, California, Utah, West Virginia and Wyoming also contributed to the report.

The report suggested several steps that could be taken by states to reduce risk to residents including improving monitoring of seismic activity and well work, direct injection of wastewater into certain faults, and establishing procedures to suspend wastewater injection when seismic activity rises to worrisome levels.

The report said one problem is a lack of good information mapping faults, particularly those at or near critical stress points. Researchers also said they do not know how large an earthquake induced by wastewater injection could potentially be.

"The research needs out here are great. We can't see what's going on down there," said Buchanan. "Being able to understand this is a challenge."

(Reporting by Carey Gillam in Kansas City, Missouri; Editing by Lisa Shumaker)

http://www.reuters.com/article/2015/09/28/us-usa-quake-oilandgas-idUSKCN0RS2HV20150928

Ohio, 12 other states working to mitigate quake risks(Akron Beacon Journal blog)
By BOB DOWNING Published: September 29, 2015
From a Monday press release:

State Primer Provides Guidance in Mitigating Risks of Induced Seismic Events
Work group creates recommendations in State Primer

OKLAHOMA CITY – Thirteen states partnered through a multi-state initiative called StatesFirst this past year to share and summarize current knowledge related to earthquakes potentially caused by human activity, otherwise referred to as induced seismicity.

Today, the work group comprised of members of state oil and natural gas and geological agencies and other advisory experts from academia, industry, non-profit organizations and federal agencies released a Primer to provide a guide for regulatory agencies to evaluate and develop strategies to mitigate and manage risks of injection induced seismicity. The Primer also outlines how states can best provide information to the public in a transparent and effective manner.

“Induced seismicity is a complex issue where the base of knowledge is changing rapidly,” according to Rex Buchanan, work group co-chair and interim director of the Kansas Geological Survey. “State regulatory agencies that deal with potential injection induced seismicity should be prepared to use tools, knowledge, and expertise, many of which are offered in this Primer, to prepare for and respond to potential occurrences of induced seismicity.”

The primer primarily focuses on potential induced seismicity associated with Class II disposal wells. Injection wells are currently regulated under the Safe Drinking Water Act through the Underground Injection Control Program (UIC). The UIC program through primacy delegation by the U.S. EPA, is administered by certain states due to their in-depth knowledge of local industry operations and geology.

In its assessment, the work group observed that the majority of disposal wells in the United States do not pose a hazard for induced seismicity; however most cases of felt injection-induced earthquake activity has generally

been associated with direct injection into basement rocks or injection into overlying formations with permeable avenues of communication with the basement rocks, and in proximity to faults of concern.

In areas where induced seismicity is thought to have occurred, the Primer also identifies the range of multi-disciplinary approaches states have used to manage and mitigate risks, discusses scientific methods for evaluating cause, identifies faults of concern, and distinguishes risks and hazards.

“Overall the risk of induced seismicity for oil and gas operation is still low,” said Rick Simmers, work group co-chair and chief of the Ohio Department of Natural Resources, Division of Oil and Gas Resources Management. “It is clear that local factors in different parts of the country present different levels of risk. Because of this, risk management, mitigation, and response strategies are most effective when developed considering specific local geology, surface conditions as well as other local situations.”

To download the Primer or to view an in-depth Webinar featuring commentary from key work group participants, visitwww.statesfirstinitiative.org.

http://www.ohio.com/blogs/drilling/ohio-utica-shale-1.291290/ohio-12-other-states-working-to-mitigate-quake-risks-1.628042

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Sent from my iPhone

On Sep 30, 2015, at 5:23 AM, Ben Grunewald <ben@gwpc.org> wrote:

> Rick, Rex, Leslie, Ivan and Mike presented the primer flawlessly!
>
> http://m.newsok.com/regulatory-groups-release-earthquake-report/article/5450013
>
> Sent from my iPhone
>
> On Sep 29, 2015, at 4:01 PM, Ben Grunewald <ben@gwpc.org> wrote:
>
> ---
>
> Dear Induced Seismicity Workgroup members and Technical Advisors:
>
> On behalf of the Editorial Committee, I want to thank you again for your participation in this important initiative.
>
> UPDATE:
>
> The primer is FINISHED and may be accessed and distributed widely at www.statesfirstinitiative.org.

Ben Grunewald
ISWG Coordinator
405 516 4972